

REMARKS

The Official Action mailed July 21, 2006, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on December 27, 2004; July 15, 2005; August 26, 2005; and November 22, 2005.

Claims 1-67 are pending in the present application, of which claims 1-4, 21, 22, 38 and 51 are independent. Independent claims 1-4, 21, 22, 38 and 51 have been amended to better recite the features of the present invention. Also, independent claim 38 and dependent claims 44, 45, 50 and 55 have been amended to correct minor typographical informalities. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraphs 4-21 of the Official Action reject claims 1-67 as obvious based on the combination of U.S. Patent No. 5,902,688 to Antoniadis and U.S. Patent No. 6,049,167 to Onitsuka, either alone or in combination with one or more of the following: U.S. Patent No. 5,945,967 to Rallison, U.S. Patent No. 5,534,314 to Wadley, U.S. Patent No. 6,495,198 to Peng, U.S. Patent No. 6,537,607 to Swanson, U.S. Patent No. 5,921,836 to Nanto, U.S. Patent No. 4,672,265 to Eguchi, and U.S. Patent No. 6,294,892 to Utsugi. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the

prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims, as amended. Independent claims 1-4, 21, 22 and 38 have been amended to recite evaporating an organic electroluminescence material in an inert gas atmosphere at an atmospheric pressure by heating an evaporation cell filled with the organic electroluminescence material, which is supported in the present specification, for example, at page 7, lines 1-6. Independent claim 51 has been amended in a similar manner, except that it recites "organic material" instead of "organic electroluminescence material." The specification discusses advantages for the above-referenced claimed features. Specifically, by performing the deposition in the manner as claimed, "the gasified and evaporation materials have small mean free process and the evaporation materials can be deposited on the substrate while maintaining a relatively high directivity" (page 7, lines 7-11). For the reasons provided below, Antoniadis and Onitsuka, either alone or in combination with one or more of Rallison, Wadley, Peng, Swanson, Nanto, Eguchi and Utsugi, do not teach or suggest the above-referenced features of the present invention.

Antoniadis and Onitsuka appear to relate to evaporation, which takes place under vacuum conditions (see column 9, lines 15-37 in Antoniadis; and column 9, lines

27-32 in Onitsuka). Antoniadis and Onitsuka do not teach or suggest that evaporation could or should take place at an atmospheric pressure. Therefore, Antoniadis and Onitsuka do not teach or suggest evaporating an organic electroluminescence material in an inert gas atmosphere at an atmospheric pressure by heating an evaporation cell.

Wadley does not cure the deficiencies in Antoniadis and Onitsuka. Wadley is relied upon to allegedly teach "an evaporation method in which a crucible (i.e., an evaporation cell) is filled with an evaporation source and directed to the deposition substrate in the presence of an inert gas at up to atmospheric pressure" (page 6, Paper No. 20060714). However, in Wadley, when using an electron beam, a water-cooled crucible is used (column 3, lines 3-11) and Wadley specifically teaches using a cooled crucible, a cold crucible or the like (column 10, lines 27-37). Wadley does not teach or suggest heating an evaporation cell. Therefore, Antoniadis, Onitsuka and Wadley, either alone or in combination, do not teach or suggest evaporating an organic electroluminescence material in an inert gas atmosphere at an atmospheric pressure by heating an evaporation cell.

Rallison, Peng, Swanson, Nanto, Eguchi and Utsugi do not cure the deficiencies in Antoniadis, Onitsuka and Wadley. The Official Action relies on Rallison to allegedly teach "that electroluminescent displays are suitable for forming video camera displays" (page 5, Paper No. 20060714), on Peng to allegedly teach "moving the substrate and organic electroluminescent sources relative to one another" (page 7, Id.), on Swanson to allegedly teach "patterning without using a mask" (Id.), on Nanto to allegedly teach "moving the deposition sources" (page 8, Id.), on Eguchi to allegedly teach "that the evaporation cell is made of tungsten" (page 9, Id.) and on Utsugi to allegedly teach "that [the claimed] pixel dimensions are suitable for organic EL displays" (page 10, Id.). However, Antoniadis and Onitsuka, either alone or in combination with one or more of Rallison, Wadley, Peng, Swanson, Nanto, Eguchi and Utsugi, do not teach or suggest evaporating an organic electroluminescence material in an inert gas atmosphere at an atmospheric pressure by heating an evaporation cell.

Since Antoniadis and Onitsuka, either alone or in combination with one or more of Rallison, Wadley, Peng, Swanson, Nanto, Eguchi and Utsugi, do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Antoniadis and Onitsuka, either alone or in combination with one or more of Rallison, Wadley, Peng, Swanson, Nanto, Eguchi and Utsugi, or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references “could have been” combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (emphasis in original). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

The Official Action concedes that Antoniadis and Onitsuka do not teach “that the evaporation takes place at atmospheric pressure” (page 6, Paper No. 20060714). The Official Action relies on Wadley to allegedly teach “an evaporation method in which a crucible (i.e., an evaporation cell) is filled with an evaporation source and directed to the

deposition substrate in the presence of an inert gas at up to atmospheric pressure” (page 6, Paper No. 20060714). The Official Action asserts that “it would have been obvious ... to have used the deposition method of ‘314 [Wadley] in place of the PVD methods of ‘688 [Antoniadis] and ‘167 [Onitsuka]” (page 6, Paper No. 20060714). The Applicant respectfully disagrees and traverses the assertions in the Official Action.

In Antoniadis and Onitsuka, a heater or a heated filament is used for a deposition method. However, in Wadley, an electron beam is used for the deposition method. Generally, in electron beam evaporation, reactive materials and/or refractory materials are used for an evaporation material in order to form an alloy or the like (see column 3, lines 3-11 and column 6, lines 15-24). On the other hand, the claimed invention relates to evaporation by heating an evaporation cell. In the claimed invention, an organic electroluminescence material is used for an evaporation material in order to form a light emitting layer. Each of the claimed invention, Antoniadis and Onitsuka relates to a different apparatus and different materials as compared to Wadley. The Official Action has not demonstrated why one of ordinary skill in the art at the time of the present invention would have been motivated to replace a deposition method using a heater or a heated filament of Antoniadis or Onitsuka with a deposition method using an electron beam of Wadley. Also, the Official Action has not demonstrated why one of ordinary skill in the art at the time of the present invention would have been motivated to apply the teachings of Wadley, which appear to relate to reactive materials and/or refractory materials, to Antoniadis or Onitsuka, which appear to relate to electroluminescent materials.

Rallison, Peng, Swanson, Nanto, Eguchi and Utsugi do not cure the deficiencies in the motivation to combine Antoniadis, Onitsuka and Wadley. The teachings of Rallison, Peng, Swanson, Nanto, Eguchi and Utsugi are summarized above. However, Rallison, Peng, Swanson, Nanto, Eguchi and Utsugi do not teach or suggest why one of ordinary skill in the art at the time of the present invention would have been motivated to replace a deposition method using a heater or a heated filament with a deposition

method using an electron beam or why one of ordinary skill in the art at the time of the present invention would have been motivated to apply the teachings of Wadley, which appear to relate to reactive materials and/or refractory materials, to Antoniadis or Onitsuka, which appear to relate to electroluminescent materials.


Therefore, the Applicant respectfully submits that the Official Action has not provided a proper suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Antoniadis and Onitsuka, either alone or in combination with one or more of Rallison, Wadley, Peng, Swanson, Nanto, Eguchi and Utsugi, or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,


Eric J. Robinson
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789